January - Lesson Plan Grades K-1

FOCUS ON FRUITS

Begin each nutrition education lesson with a short physical activity break from the card set provided by IDPH. Have fun and get active with your students!

Objectives

Using the five senses, describe an orange and a mango.

Understand why we need to eat foods rich in vitamin C

Supplies Needed

January
Pick a **better** snack™ & **Act** bingo card

Mangos

Oranges

Knife

Exploring the Five Senses worksheet called "Exploring Orange- Outside" (front) and "Exploring Orange- Inside" (back)

"Mango and Orange" coloring sheet

Crayons

Tasting Opportunities

Featured Fruits:
- Mango
- Orange

Background

Fruits are the edible parts of a plant that develop from the flower. (Fruits usually grow on trees, shrubs, or vines that grow for many years.) Fruits are often rich in vitamin C that helps our bodies heal cuts and wounds, and build bones and teeth. When eaten with food rich in iron, it helps your body absorb the iron.

The January bingo card features the mango. The mango is called the "king of fruit". It is the most popular fruit in the world. Its taste resembles a mix of oranges, peaches, and pineapples.

The mango originated in India or Southeast Asia nearly 4,000 years ago. It grows on evergreen trees. Some grow as tall as 60 feet! The mango tree grows best in sub-tropical and tropical environments. Most of the mangoes sold in the United States are grown in Haiti, South America, Mexico and the Caribbean.

Mangoes are 2-4 inches in length and are very colorful. They are greenish, yellowish, or reddish in color. Inside them is a flat, hairy seed. Mangoes are very rich in vitamins A and C. Vitamin C helps our bodies fight infection and heal wounds. Vitamin A is very important for healthy eyesight, skin, growth, and helps our body resist infection. Compared to other fruits, mango has the greatest amount of beta-carotene. Beta-carotene is part of a family of phytonutrients called carotenoids. Evidence indicates that phytonutrients may protect the human body from certain cancers and heart disease.

The other feature fruit on the bingo card is an orange. Oranges are thought to have originated in Southeast Asia in ancient times. They were known to have a bitter or sour flavor at that time. Sweet oranges were first grown in Spain. One kind of sweet orange, the Naval orange, originated in Brazil. Columbus introduced a variety of citrus fruits, including oranges, in the late 1400's. The United States is

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now the 2nd largest producer of oranges. Brazil is the leading producer.

Oranges, like mangoes, grow on evergreen trees. The orange trees only grow up to 30 feet tall. Orange trees grow best in sub-tropical and semi-tropical climates.

Like mangoes, oranges are also high in vitamin C. Vitamin C helps our bodies fight off infections and heal wounds. Oranges are also a good source of folate and fiber. Folate is needed for growth and development. Fiber helps move food through our bodies.

Orange juice is made from the juice that is squeezed out of an orange. Fruit juice must be 100% juice to count toward the daily fruit recommendation. If a beverage is labeled a "juice drink," it is not 100% fruit juice. Juice drinks have added sugar and water and are typically fortified with vitamin C. Many popular juice boxes, pouches, and bottles are juice drinks.

Web Site Resources

www.idph.state.ia.us/pickabettersnack
www.fruitsandveggiesmorematters.org
www.choosemyplate.gov

Do the Activity: Kindergarten

Exploring the Five Senses with an Orange - Hold up an orange, cut it, and have a student describe its appearance, smell, taste, feel, and sound.

Pass out the "Mango and Orange" Coloring Sheet and have the student color it.

First Grade

Hold up a mango, cut it, and have a student describe its appearance.

Sing the Mango Song

The M-A-N-G-O Song
(Sing to the tune of B-I-N-G-O)
"X" means clap

There is fruit that's good to eat, and MANGO is its name-O
M-A-N-G-O, M-A-N-G-O, M-A-N-G-O, and MANGO is its name – O

It's a tropical fruit that needs warm sun, and MANGO is its name –

O
X-A-N-G-O, X-A-N-G-O, X-A-N-G-O, and MANGO is its name – O

The skin outside is reddish green and MANGO is its name – O
X-X-N-G-O, X-X-N-G-O, X-X-N-G-O, and MANGO is its name – O

The seed inside is very big, and MANGO is it's name – O
X-X-X-G-O, X-X-X-G-O, X-X-X-G-O, and MANGO is its name – O

The fruit inside is yellow and sweet, and MANGO is its name – O
X-X-X-X-O, X-X-X-X-O, X-X-X-X-O, and MANGO is its name – O

There is a fruit that's good to eat, and MANGO is its name – O
X-X-X-X-X, X-X-X-X-X, X-X-X-X-X, and MANGO is its name – O

Talk It Over:

What color is the outside of a mango? *(reddish-green)*

What color is the inside of the mango? *(yellow)*

What color did you color your orange? *(orange)*

What color is the inside of the orange? *(orange)*

Are oranges and mangos the same shape? *(no-the mango is oval and the orange is round)*

To what food group do mangos and oranges belong? (*Fruits)*

Apply:

Ask "Why is it important to eat mangos and oranges?" *Mangos and oranges are very rich in vitamin A and C. We need vitamin C to help heal cuts.*

Ask "When might you eat a mango or an orange?" *Anytime-at mealtime or for a snack*

Ask "Can you name a food that you would have at breakfast that is made from oranges?" *orange juice*
Ask "Why do you think oranges make a good snack?" *Oranges make a great snack because they are easy to fix and they are good for me.* ***Wash. Peel. Eat. (How easy is that?)***

Pick a **better** snack™ reminds you that it is easy to eat fruits as snacks.

Tasting Opportunity

Have students wash their hands. Cut up mangos for the students to sample. Cutting a mango is a little challenging because of the large, flat seed inside.

- Begin by washing the mango.
- Then hold the fruit standing on one end and make a vertical slice down one side of the pit.
- Repeat on the other side of the pit.
- Pull the two halves apart and remove the seed.
- Use a paring knife to score the flesh of each half into cubes-using care not to cut through to the skin.
- Turn the fruit inside out so the cut fruit pops outward.
- Cut the cubes off of the skin.

Section oranges for the students to sample. They can then put an "X" through the bingo square of the fruit that they sampled.

How would you get a mango ready to eat as a snack?

Mango – **Peel. Cut. Eat. (How easy is that?)**

How would you get oranges ready for a snack?

Orange – **Wash. Peel. Eat. (How easy is that?)**

On the back of the Pick a **better** snack™ & **Act** bingo card each month, there is information for their parents and grandparents. Send the bingo card home and ask the students to have their family pick out a snack idea to try.

Extend the Activity

Art, Music & PE

Place construction paper, pencils, and scissors at a learning center for the students to create their own story parts for The Very Hungary Caterpillar by Eric Carle. Have students put their story parts in an envelope to retell the story at home.

Read The Very Hungary Caterpillar by Eric Carle. (This book is available on an audio tape.)

Language Arts & Reading

Ask "What fruit recently introduced did the caterpillar eat?" *Oranges*

Ask "What other fruits that we have talked about are in the book, too?" *Apples in October, pears in November, and plums in September. Strawberries are featured in May.*

Math

Place felt cutouts of the appropriate numbers of each fruit (1 apple, 2 pears, 3 plums, 4 strawberries, and 5 oranges) along with felt numerals and The Very Hungry Caterpillar at a flannel board in a learning center. Model retelling the story using the felt pieces. (The other foods in the story could be created also along with a small caterpillar, a leaf, an egg, a moon, a sun, a big caterpillar, a cocoon, and a butterfly.)

Science & Health

Try to sprout the mango seed. Instructions on next page.

Social Studies

Encourage the students to go to the grocery store with their families to find oranges and mangos in the produce section.

SPROUTING A MANGO SEED

By Eunice Messner -- CRFG Fruit Specialist Coordinator

There are as many ways to sprout a mango seed as there are growers. After you have enjoyed eating the mango, scrape off as much of the flesh off the seed as possible. Let it dry overnight for easier handling. Then, with a sharp knife, scrape vigorously along the concave edge of the husk. This will enable you to pry the husk open and remove the embryo. Be careful not to damage the seed.

If it is a store-bought mango, you may wish to first test it for viability. (Mangos are sometimes held in storage too long at a grocery store). If the embryo is gray, that is a sign of too much cold storage; if there are black markings, this indicates a fungus. Throw these seeds away. You can test for viability or actually sprout the seed by wrapping it in dampened paper towels; place it in a plastic bag and put it on that warm spot on top of your refrigerator. If a radicle (root) emerges, the seed is viable and it may be planted in a gallon can. Use a good potting mix with a handful of soil. If you have any mycorrhizae (beneficial fungus) on hand, a pinch of it on the root will get it off to a good start. The seed should be planted with the hump halfway above the soil. Some growers put seeds in a bowl of non-chlorinated water for three days (changing it daily) and then remove the outer brown skin before planting it.

If you have a lot of fresh seeds from your own tree, then arrange them in a container at least 4" deep (a plastic shoe box with holes punched in the bottom works well). Use either coarse river sand or a potting mix. Arrange them in the container about 1 ½ inches apart with the hump visible above the soil. Place on a pad with bottom heat or in a propagation box with a light bulb for heat. The temperature in the box can get up to 100 degrees but the mangos love it. When a stem with two leaves emerges, VERY carefully lift out the rooted seed and plant in a pot. Keep in a warm place.

Usually only one stem will emerge from your sprouted seed. However, there are some varieties of mangos, called polyembryonic, that develop several stems. These may be broken apart and planted separately, or all but one snipped off at soil level. The strongest one is the best selection. Chances are most of them will develop into an exact clone of the parent plant. These have developed from nucellar tissue. One may be a hybrid developed from pollen of another tree.

Mango seeds are viable for only a short time. If you are on an extended trip, a dampened paper towel will help to maintain their viability longer. But first, check with your agricultural agent to see if mango seeds can be imported.

Seedling mango trees usually grow BIG, but by pruning after the fruit is gone, size can be controlled. It usually takes about 5 years for a seedling to fruit. Since there has been so much hybridization work with mangos to develop a perfect fruit, chances are your seedling, even from a monoembryonic, hybridized seed, will be a winner. Enjoy!

Source: California Rare Fruit Growers, www.crfg.org

EXPLORING ORANGE

OUTSIDE

EQUIPMENT

Cutting board
Sharp knife (teacher's use)
Paper towels and/or napkins
Paper cups

INGREDIENTS

1 orange for each child
Different varieties may be explored

Let everyone look at an orange. *(teachers)*

- What colors do you see on the orange?
  Is it orange like a carrot? What color do you see the most of?
- Why do you suppose oranges are called oranges?
- Find something in the classroom the same shape as the orange.
  Is the orange bigger or smaller than what you found?
- Does your orange have a bottom? This variety is called Navel.
- Can you tell where the orange was attached to the tree?

Let each child run his hand over the outside.

- Does the skin feel more like an apple or a lemon?
- Squeeze the orange.
  Is it softer than an apple? Is it light or heavy?
- If your orange has a "bottom" how does it feel?

- Does the orange smell?
  With your eyes closed, can you tell the difference between an orange and a ball?

- Does the orange make a noise when you shake it?
- Does it make a noise when you roll it?
- Squeeze it close to your ear.
  Does it make a sound? What other kinds of noises can you make with your orange?

EXPLORING ORANGE

INSIDE

Cut the orange in half crosswise.

- What colors do you see?
  Are they the same as those on the outside?
  Is the main color still orange?
- Does the inside look like a bicycle wheel?
  Can you find the lines or spokes of the wheel?
  Can you find the middle or hub of the wheel?
- Can you find any seeds?
  What color are the seeds?

Cut an orange in half lengthwise.

- Can you find the half moon or smile?

Help everyone peel an orange.

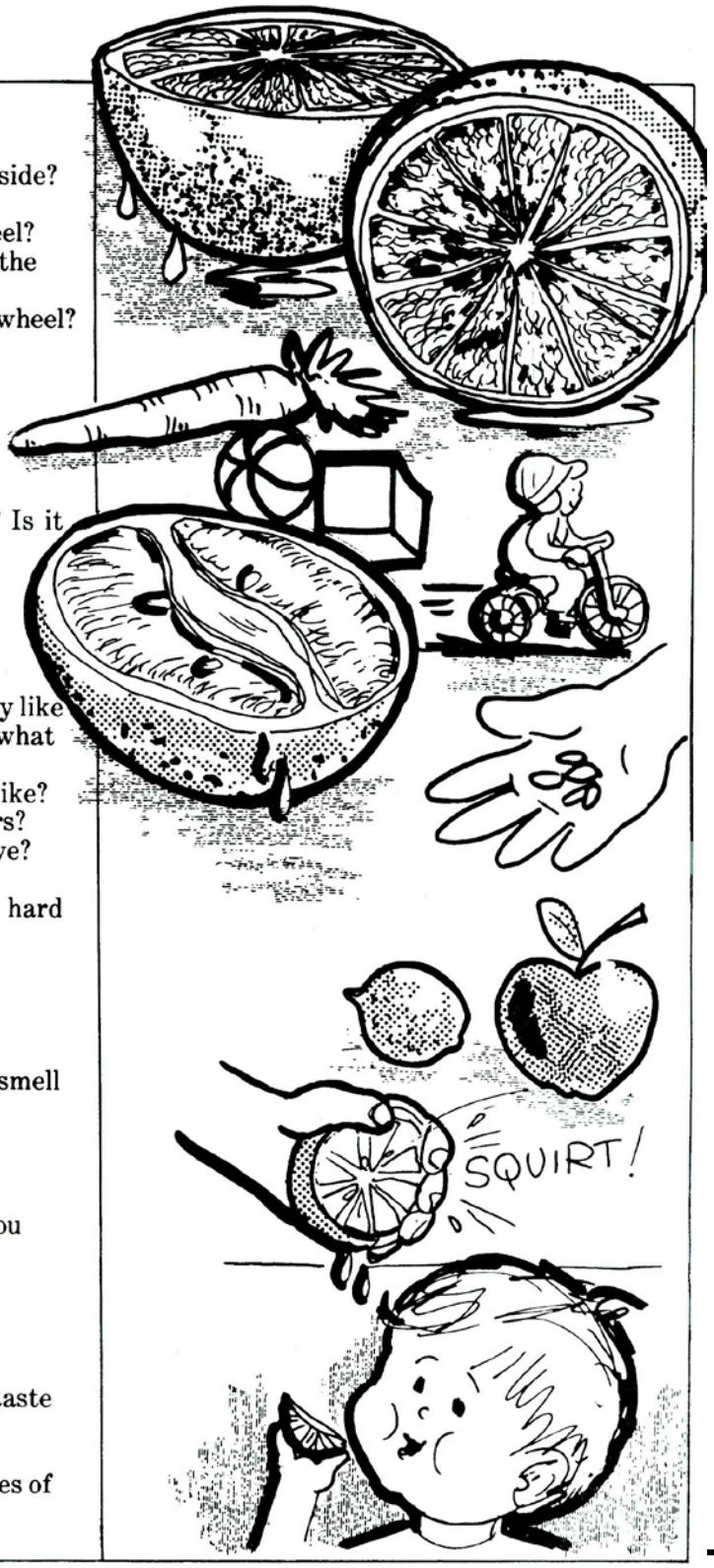
- Does the peel come off easily?
  What color is the inside of the peel? Is it different from the part you eat?

- What does the cut orange feel like?
  Is it like a wet wash cloth? Is it slippery like finger paint? When you squeeze it, what comes out?
- What does the inside of the peel feel like?
  Can you press it in with your fingers?
- How many seeds does your orange have?
- Pick up a seed, how does it feel?
  Can you roll a seed? Squash it? Is it hard or soft?

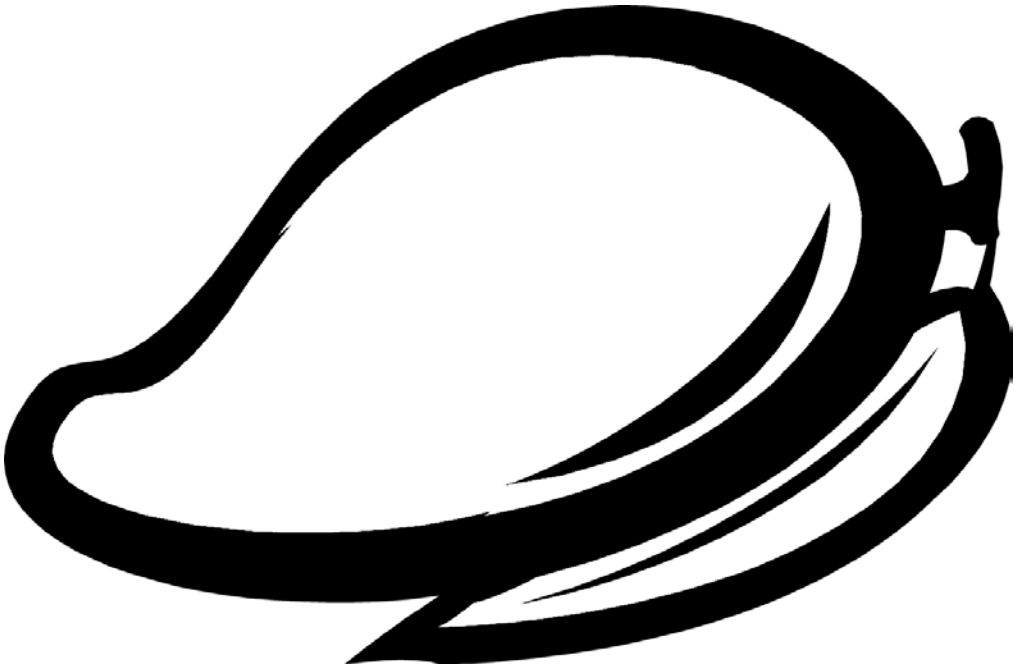
- Does the inside of the orange smell?
  Does it smell like the outside? Does it smell good?

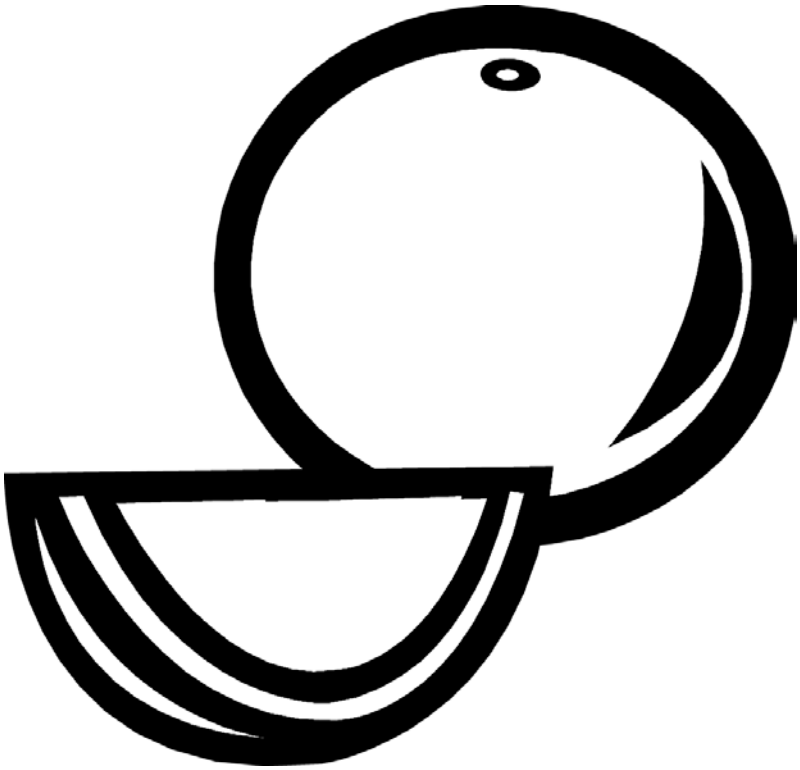
- Does the orange make a noise when you squeeze it?

- How does the orange taste?
  Does it taste like grapefruit? Does it taste good?
- Does the orange taste like it smells?
- Does the juice taste the same as the pieces of orange?



Mango





Orange